

- 621 'colonies' or *tunga*. The *tunga* thus possesses land in its own right, but at
361 the same time pushes its territorial possessions further into no-man's-land.

Access to Village Land

- 621 There is no general rule for the distribution, within the area of village
423 land, of the farms belonging to the various family groups and individuals. Roughly one may say that the small individual plots (called *bucc*—a term to be explained presently) are situated near the village and the larger family plots (*efako* plots) farther afield. When old men own plots of their own they, too, are given plots near the village so that they should not have to walk too far. The different plots which belong to the group of people living together in the same house (as a rule, a single family group), whether the plots are worked jointly or independently by the various household members, do not necessarily lie together, but are frequently scattered. Nor have the people who live together in the same *efu* their land on adjoining sites, or in the neighbourhood of the part of the village where they live. We may add that, again, there exist no special signs or boundary marks to distinguish the property of different farmers. A narrow path, a border of shrubs, or a tree, serve as landmark.¹ But the different cultivation that may be practised on the different fields, or the different stage of cultivation which the different fields may represent (fallow land, land that has been worked for one year, or two years, &c.), make these boundaries more obvious to the eye.

- 242 This irregular distribution of farm-plots appears to be due to a variety
423 of causes. To some extent it is entailed in the complex agricultural technique of the country, with its many different types of cultivation and its regular system of rotation of crops. Every farmer owns a certain number
621 of fields—some under cultivation while others are lying fallow—which he tries to distribute over different sites so that he can utilize different types of soil, e.g. the marshy sites near watercourses for the cultivation of rice or sweet potatoes, dry sandy soil for ground-nuts, heavier soil for yam and cotton, and so forth. This arrangement also has the advantage of distributing more evenly the risks of failure. You often find farmers complaining that one site on which they have a farm is less good than another, or has perhaps suffered special injury that year through birds or through thieving baboons, or has been washed away by a flooded river. But the irregular distribution of farm-plots is also a result of the very method of Nupe settlement: it could not be otherwise with the farm-land lying in a circle round the large villages in which a numerous population is concentrated. There would not be room enough for all family groups in the village to have their lands arranged in compact blocks in equally favoured positions, both with regard to the distance from the village and to the quality of the soil. Moreover, some plots more heavily worked than others 'tire' sooner and must be replaced by virgin land lying farther afield; and growing families must provide more land for their

¹ A characteristic exception are a few marsh-land plots near Kacha, which are properly fenced in—'because of the many disputes' that arise over this kind of land.

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adult members. All these factors have in the course of time contributed to make the map of Nupe village land the irregular patchwork it is to-day. 423 621

At the beginning of this section I have mentioned the possibility that a family head may have to request additional land from the chief for a junior family member for whom he cannot find sufficient land on his own property. To-day, this is rarely put into practice, usually only in the extreme case when a whole section of the family, finding the available land near the village insufficient or too poor in quality, sets out to colonize a piece of virgin land and eventually to settle there as founders of a new *tunga*. In the normal case—especially in Trans-Kaduna—when land has to be found for an individual family member, the family head is as a rule expected to possess sufficient land to effect this readjustment. The family head, owning three to four different fields, each of about 4 acres, can, in fact, well afford it in a society with so low a birth-rate. The worst that may happen is that for a time the family head may have too much of his land lying fallow to be able to find additional land for the family member who desires a new farm. It is then that the method of 'borrowing' land is practised. 423 621

Let us consider now more closely the position of the chief with respect to the question of access to village land. Control over the land is part of his political authority. It is, as I called it, an administrative control only, and this is expressed in a balanced, twofold, limitation of the claims to land of chief and community, of the power of the chief to apportion or withhold land, and of the power of the family head to claim and keep land. As regards the former limitation, the chief cannot reasonably withhold land from any claimant of whom the other elders of the community approve. Nor is the chief's own farm-land out of proportion to that of any other family head with an equally large working-group at his command. As regards the latter limitation, the control which the chief retains over all reapportionment of village land is acknowledged whenever the main family land changes hands, that is, in the case of succession to the position and property of a family head.¹ The chief must be informed of all such changes, and in some parts of Nupe he summons at this occasion the family members with their new head and reminds them of their obligations towards each other: the family members, that they will now work on the land of the new family head, and the family head that he has now assumed the responsibility to feed and clothe his people and, some day, to supply them with land of their own. Sometimes a gift to the chief of one pail of whatever crop is just ripe seals the pact. The annual village tax in kind, *dzankd*, which, as we know, was formerly paid to the chief by every family head, is itself a land-tax, a recognition of the chief's control over the village land. It consisted in a gift of one to three bundles of millet or sorghum, the amount varying with the condition of the crop. A complete failure of the crop meant exemption from the *dzankd*. The *dzankd* was thus not regarded as a fixed tax, but rather as 423 622 651

¹ The succession to the position of family head being, in most cases, identical with the succession to a *nisa* rank, the procedure described here holds good for both (see p. 30).

423 present Emir, who comes from the royal house of Umaru Majigi, thus
 241 owns, unlike any of his predecessors, two royal estates: his own family
 643 estate near the Jima gate, south of Bida, and the new estate on the Crown
 427 land near the Wuya gate, which, like the residence itself, belongs to the
 modern accoutrements of his office. The *eso*zi people on his family
 estate were prepared to work for him on the usual *dzankd* arrangement.
 But the *eso*zi of Etsu Masaba—the *eso*zi on the land that had now become
 his official estate—refused to work for their new landlord on the
 old terms, and demanded money wages. Finally, when the Etsu
 in 1936 started an experimental farm for mixed farming on his family
 446] estate, the *eso*zi workers there also denounced the old agreement and
 demanded wages; for this was work of a new kind altogether, work
 carried out entirely for their landlord, no longer work after their own
 fashion, from which they could hand over the traditional share in the
 produce.

Non-agricultural Use of Land

423 A few words must be said in conclusion about rights to land that is
 used for other than agricultural purposes, such as clay-pits from which
 clay is obtained for pottery or for the sun-dried bricks used in house-
 building, the iron-ore deposits which are used by the native iron-ore
 smelters, or the space needed for the dye-pits of the indigo dyers. All
 these stretches of land, whether they are situated close to the house (like
 the dye-pits) or some distance away (like the clay-pits and the
 ferruginous hill-side) are accessible to all.

423 The thick strips of rain-forest near the rivers are specially valuable
 313 'no-man's-land'. Here woodcarvers and carpenters find the timber they
 need for their work. The branches of certain palm-trees are used for
 438 rafters in roof building; a certain species of reed is used for the making of
 the curtain-like mats which the Nupe call *eshegi* (the Hausa *asabari*);
 other species of grass, and the leaves of the dum-palm, are used for mat-
 making and the making of straw hats. The fact that these materials are
 found only in certain places, far away from the town where the craftsmen
 who are using them are living, is turned to economic use, and the pro-
 curing of the raw material thus gains independent commercial signifi-
 cance: the big palm-branch rafters are sold on Bida market by the men
 who cut them; and men and women frequently use the time of com-
 parative leisure in the dry season to travel down to the river in order to
 collect dum-palm leaves and marsh-grass, which they sell later, for a
 little money, to mat- and straw hat makers.

423 The collecting and selling of firewood (which is done by women) and
 313 the cutting and selling of grass for roofing (done by men) belongs to a
 slightly different category. For in this case the non-agricultural use of
 land does not apply to 'no-man's-land'; the farmers and their families

in this transaction and remained the property of the original landlords, i.e. the
 head of the house of Etsu Masaba. Thus in January 1936, when the new official
 residence of the Emir had been standing already for almost a year, people from
 the house of Etsu Masaba were collecting the fruits of the trees on the new
 Crown land.

241 for different kinds of crops. Ground-nuts, sweet potatoes, and certain vegetables are always planted in ridges, yam always in mounds. As regards the other crops, the rule is that in a first cultivation, that is, on a plot planted for the first time after having lain fallow, mounds are thrown up; in the subsequent year the mounds are turned into ridges, as a result of the practice of 'shifting' the ridges and interplanting in the second half of the planting season. The throwing up of mounds is by far the heavier and longer work. 'Lazy' farmers—in the eyes of the people—thus sometimes prefer the easier job of making ridges even in a first year's cultivation.¹ Big trees are always left standing on the farms and cultivation is carried out round them. The Nupe farmers appreciate the shade of big trees during the heat of the day. Small trees on the farm-land which do not bear fruit are lopped or cut about 4 ft. from the ground. This becomes important in the period of lying fallow; for the tree-stumps and undergrowth which the farmer leaves standing on his fields help to put the fallow land under a growth of 'bush' rather than grass, thus assisting and speeding up the regeneration of the soil.²

241 The cultivation on the marsh-land farms is adapted to the conditions
3/2 of a natural annual irrigation by the flooded rivers and watercourses. The irrigated area is divided into square plots, approximately 6 ft. by 9 ft., each consisting of from four to six ridges running parallel and two ridges at right angles on the upper and lower end. The ridges are flat and narrow; they do not connect at the corners, but leave small channels open; by means of these ridges the water from the flooded river is distributed evenly on the cultivated plots, and at the same time kept standing there.

241 In the lay-out of the Nupe farms the aesthetic aspect is strongly pronounced. The farmers pay much attention to drawing their ridges nicely parallel and as straight as possible, and to distributing their mounds symmetrically over the field. The nice rounding-off of the border of a field is specially appreciated. Frequently one finds ridges and cross-ridges arranged in a symmetrical and even conspicuously ornamental pattern. Similarly, the skill and keenness of the farmer is judged by the clean look of his farm, with all weeds, leaves, and brushwood cleared away. An overgrown, untidy looking farm invariably elicits the comment: *za-gá de kokari á*, 'that man makes no effort'.

ROTATION OF CROPS

● 242 The Nupe system of agriculture is based on shifting cultivation combined with a well-worked-out rotation of crops. Plots are kept under cultivation for from four to seven years (see p. 205), i.e. till the land 'grows tired', and then abandoned temporarily. The individual farmer does not, however, always wait until failing crops have warned him of

¹ The mounds represent the more thorough cultivation, utilizing a deeper and, I believe, also heavier layer of the subsoil. This is shown in the fact that yam, which demands a heavy and more humid soil, is always grown on mounds, while ground-nuts, for which light sandy soil is best suitable, are invariably grown on the low ridges. (Cf. Faulkner and Mackie, op. cit., pp. 147-8.)

² See op. cit., p. 44.

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the 'tiredness' of his farm-plot, but as a rule simply follows the general routine obtaining in his area, varying the standard period of cultivation occasionally by one year, in accordance with the special requirements of his farm-land. For the abandoned field a new plot is taken under cultivation, while the former is left to lie fallow, until eventually it will again be fit for cultivation. The period of lying fallow, dependent as it is on local conditions of land-tenure and individual land-holdings, varies much more widely than the period of cultivation—between four and fifteen years.

During the period of cultivation a strict rotation of crops is observed. There exists a comparatively large number of different types of rotation, of which I shall mention only the most important. The rotation depends on the crop which is planted first on a plot taken under cultivation. The following chart illustrates the most common types of rotation:

Table of Four-Year Rotation

	A	B	C	D
1	Yam	(Bulr.-mill.) late millet and sorghum	Ground-nuts (and cassava)	Cotton
2	Maize and sorghum or bulr.-mill.; late millet and sorghum	" "	(i) bulr.-mill., late millet, and sorghum	Bulr.-mill., late millet, sorghum
3	Bulr.-mill., late millet and sorghum	" "	" " "	" "
4	" "	" fallow," or cassava, sweet potatoes, and beans	Cassava, sweet potatoes, and beans	Cassava, sweet potatoes, and beans

The main rules in this rotation are these: yam, cotton, and ground-nuts are 'one-year crops', i.e. they are invariably the first crops in the cycle of rotation and are not as a rule planted a second time on the same plot. On the contrary, it is well known that millet and sorghum do particularly well planted as a second year's crop after cotton, ground-nuts, or—in a less common rotation—red pepper. Where the rotation starts with millet and sorghum bulrush-millet is sometimes left out in the first year and added later, as it does not do very well as a first crop on a new field, especially if the rains happen to be late. Also it is sown mostly only where there are a number of neighbouring fields under cultivation; on isolated fields the danger of birds picking the crop is too great. On the other hand, land on which the two millet kinds and sorghum are planted in succession may 'tire' sooner than land planted with varying crops and thus have to be abandoned after only three years. The alternative choice, finally, after a first crop of ground-nuts (C (i) and (ii) in the table) depends mainly on the energy and keenness of the farmer; the crops listed under (i), i.e. the combination millet-sorghum,

- 242 though more valuable, involve the heavier work, namely, a complete re-hoeing of the ridges.

Jebba Island, which is half marah-land, is the only area where I found yam planted twice on the same plot. This type of cultivation necessitates a different system of cropping: between two yam crops sorghum alone is planted, without the additional two millet crops, which is said to exhaust the soil far less than does the mixed cropping. Even so, the field supports only three successive crops, and is left fallow after the three years. Before the second yam crop, i.e. after two years' cultivation, the operation of 'shifting the ridges' takes place, which we shall describe later in detail, and which, in the normal rotation, has to be carried out every year. As an alternative the people of Jebba Island practise a five or six years' rotation with four or five sorghum crops succeeding a first year's yam crop, the 'shifting of the ridges' being again inserted after two or three successive crops.¹

The table shows further that certain crops are planted together on the same plot. This combined cultivation is much more extensive and much more varied than is shown in the table. The practice of 'interplanting' certain crops between others is one of the most characteristic features of the intensive and economical farm technique of the Nupe. The people speak, in fact, in connexion with this interplanting of *ewo banza*, 'useless ridge', meaning here the furrow between ridges or mounds; it is the 'useless ridge' that is utilized in the interplanting. This combined cultivation constitutes at the same time one of the most complicated aspects of Nupe farm technique because of the wide range of variations which it permits. These are the main combinations:

Simultaneous Interplanting. In the purely agricultural districts the two millet kinds and sorghum are planted together on the same mound, sorghum on the top and bulrush-millet and late millet on the flanks of the mound. The three crops are not planted quite simultaneously, bulrush-millet being sown a little before the other two crops (see chart, p. 213). The farmers near Bida practise various other combinations, e.g. late millet-sorghum, maize-sorghum, or late millet-sorghum with ground-nuts interplanted in the furrows.

Yam and okra are frequently planted together, yam on the top of the mound and okra at the foot.

Ground-nuts and cassava may also be planted together, ground-nuts on the top of the ridge and cassava in the furrow between the ridges. The same arrangement obtains with sweet potatoes and cassava.

Successive Interplanting. After the reaping of bulrush-millet or maize beans are sown in their place, i.e. on the same ridges or mounds, between the still growing late millet and sorghum plants.

Melons are frequently planted irregularly between various crops.

Cassava may be interplanted with any crop, e.g. yam or millet and sorghum, and at any time.

On the farm-plots close to the compounds, which are manured with the refuse from the house, no rotation is practised. Nor does such complicated rotation exist on the irrigated marsh-land farms. Here the same

¹ In Yoruba country, where the soil is much richer, three or four successive yam crops are said to be the rule.

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plot can be cultivated for ten years or even longer. The cultivation follows every year the same pattern: two alternating root-crops, cassava and sweet potatoes, and, after they have been harvested, on the same plot, rice. On certain marsh-land farms in the Kaduna valley two successive crops of maize are grown. Other marsh-land farms again (on the rivers Gbako and Kaduna, and on a smaller scale near Kutigi) are devoted to the cultivation of onions and partly sugar-cane. Farmers in inland areas who possess a field close to a watercourse plant rice in addition to the usual inland crops.

To return to inland cultivation. Of the four types of rotation listed in our table (A B C D) the farmer selects a certain combination. Most farmers, as we shall see presently, cultivate two or three crops at the same time, the most frequent combination being ABC, ABD, and AAC (D), i.e. a rotation which includes the maximum proportion of staple food crops, millet, sorghum, and yam, together with one or two commercial crops. By a judicious overlapping arrangement, starting the different series of crops in successive years, the farmer secures an even distribution of these crops. This is an example from Mokwa, recorded in 1936.

	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6
1935	..	Yam	Sorghum, millet	..	..	..
1936	Yam, ground-beans	Maize, sorghum, beans	Sorghum, millet	..	Ground-nuts	..
1937	Maize, sorghum	Sorghum, millet	Sorghum, millet	Yam	Cassava	Ground-nuts
1938	Sorghum, millet	Sorghum, millet	(?)	Maize, sorghum	Cassava	Cassava
1939	Sorghum, millet	..	..	Sorghum, millet	?	Cassava
1940	..	..	..	Sorghum, millet	..	Cassava

The main problem in determining a suitable system of rotation are the 'one-year crops'. It can be seen that, allowing for a minimum period of four years for lying fallow, a farmer must have at least four different plots under cultivation in order to obtain one of the one-year crops in every year of the rotation, or eight plots, in order to secure a continuous, uninterrupted, cultivation of these crops. Where such an extensive subdivision proves impossible, the number of one-year crops will vary from year to year, in accordance with the progressive stages of the rotation. In 1936 I found that of thirty-seven farms on which one or more of the three 'one-year crops' were grown only two farms combined all three, six combined the cultivation of yam and ground-nuts, seven of yam and cotton, and of the remaining twenty-two the cultivation was restricted to one of these three crops.

The selection of crops on which the farmer eventually decides and the cycle of rotation which he will accordingly adopt will thus depend primarily (ignoring here the question of the quality of the land) on the size of his farm-land and the possibility, or profit, of subdividing it into plots for different cultivation. Evidently, land cannot be subdivided indefinitely to make room for a large variety of crops. I have found that

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242 the farms under cultivation in Nupe varied in size from 2 to 10 acres, according to the number of men who are working together; the average size of farm corresponding to one able-bodied male adult is from 2 to 2½ acres. A farm of this size (i.e. a one-man farm) can still be subdivided into two or three plots, for the cultivation of different crops; larger farms can be subdivided into three or four different plots for cultivation. In addition to the field cultivated at a given time the farmer as a rule possesses from one to three fallow fields of the same size to which he turns when it becomes necessary to take a new field, or new plots on this field, into cultivation.¹ The following examples, which were collected in Lemu, a prosperous village north of Bida, may illustrate the relation between size of farm and selection of crops. These examples represent, of course, only stages in the four-year rotation, which explains the reason for the absence of certain one-year crops in the selection of crops which were grown that year.

1. Five men working together; total land under cultivation approx. 9½ acres. Grain (millet and sorghum), 6 acres (half of this plot was under yam cultivation the previous year); red pepper (formerly ground-nuts), 1½ acres; cotton, 2½ acres.
2. Three men working together; total land under cultivation 6 acres. Grain, 5½ acres; rice, ½ acre.
3. Two men working together; total land under cultivation over 4 acres. Grain, 2 acres; yam, 2 acres; ground-nuts, ½ acre.
4. One man working; total land under cultivation under 2 acres. Grain, 1½ acres; rice, ½ acre; red pepper, ½ acre (½ acre under yam cultivation the previous year).
5. One man working; total land under cultivation over 2 acres. Grain, 1 acre; yam, 1 acre; rice, 200 sq. yds.
6. One man working (a young man, recently married); total land under cultivation 1 acre. Grain, ½ acre; red pepper, ½ acre.

These examples bring us to a further condition determining the selection of crops and type of rotation, namely, the size of the working group at the disposal of the farmer, and the efficiency of its organization; on its co-operation depends the carrying out of the complicated and at times overlapping schedule of planting, weeding, &c., without any of the crops being neglected. Finally, the selection of crops is also determined by the prospect of return, i.e. by the satisfaction of specific wants which the farmer may expect from the different forms of cultivation. We will for the present ignore this last point and concentrate on the second condition. In order to understand fully we must study more closely the agricultural calendar of the country. In the attached chart I have tabulated the schedule of Nupe agricultural activities. It will be best if I supplement it with a description of the more important agricultural activities as I have observed them in actual cases. First, however, a few comments are necessary.

¹ It can be calculated that for the continuous cultivation of two one-year crops, e.g. yam on 1 acre and ground-nuts on ½ acre, in addition to an ordinary crop, e.g. grain on 1 acre, a total land possession, i.e. worked as well as fallow land, of 9-10 acres is necessary. The figures quoted above show that actual practice falls considerably short of this standard.

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to check the attempts to extend kola plantation in Nupe. Whether or not it will check other attempts at agricultural innovations one cannot say.¹

Often in discussions of this kind the reluctance of a native group to adopt a certain innovation is summarily dismissed as being due to the inveterate, almost proverbial, 'conservatism' of the native races. Clearly, such an explanation does not meet the case. As regards the Nupe we should have to contrast their alleged 'conservatism' with respect to trees with the readiness with which they adopt new crops and agricultural techniques. Evidently, to adopt a new crop which shows results in a year's time, and which is easy to tend, often easier than the traditional crops (as in the case of maize or cassava), and to take up the difficult work of planting trees which may not bear fruit for six or seven years, is an entirely different thing. One can be easily fitted into the framework of established agricultural activities while the other involves a complete readjustment of the productive system. The Nupe are, within limits, extremely progressive people, and keen on trying out new things. These limits are determined by two factors: first, by the time that an ordinarily crowded working year could allow for additional tasks; other work, or precious leisure time might have to be given up for the sake of the innovation—a change that may or may not appear worth while to the Nupe farmer. The second factor is the measure of change which a readjustment of the native production would entail in this closely knit economic system, with its exact balance of specialization and exchange. Every radical change in the production, such as the adoption of tree-cultivation in a district, may upset this balance; it may, in other words, make the innovation less profitable. The fact that the Nupe farmer is go-ahead with respect to certain farm techniques and 'conservative' with respect to others is not due to any tribal or racial 'conservatism', but reveals itself as a clear instance of the working of free economic choice.

TECHNIQUE AND KNOWLEDGE

So advanced a technique and so conspicuous a standard of husbandry must involve a body of theoretical knowledge which goes far beyond the counsels of peasant lore, and could avouch statements of very nearly scientific authority. This is no doubt the case in Nupe farming. The understanding of the basic principle of manuring, the fixed rules with regard to rotation and lying fallow, the practice of thinning-out the growing plants, which is correctly explained as being intended to give the plant more space, they all confirm this.² Moreover, while in many African

¹ Rev. Ira W. Sherk, the head of the U.S. Mission at Mokwa, has been successful in making the people of a small neighbouring village adopt the cultivation of grapefruit. This innovation, carried out on a very small scale, and involving hardly any difficult readjustment of the native productive organization, bears out what is said later in the text about the limits that are set to all such innovations.

² I must record that one of my Bida informants, an experienced farmer, denied the value of ashes and the burning of fields as manure. He held that animal manure (with the regular use of which he as a Bida farmer was well acquainted) was the only effective manure. This critical attitude only emphasizes the element of empirical knowledge in Nupe farming technique.

242 communities rulings on agricultural technique and the organization of agricultural labour appear in the guise of magic devices and rituals, there is none of this in Nupe agriculture, which remains matter-of-fact and consciously based on empirical knowledge.¹

[1868] In a productive organization of this kind special emphasis must be laid on the position of authority of the old and experienced farmer. It can be studied in action whenever groups comprising both older and younger men co-operate in farm-work. In family work as well as in non-family co-operation the older men always lead the work or supervise the work of the younger men; they point out mistakes to them and teach them the important rules of farm-work. I have frequently seen men scold boys for damaging a plant when weeding, or for planting seeds too close. Boys are made to work on the farms from the age of 6 or 7, first with toy-like light tools, later with the real heavy hoe, in order to learn through practice and under constant supervision. In Nupe farming very little is left to chance. I have, for example, never heard of anyone starting farm-work too early or too late in the season and thus wasting the seeds—a mistake not uncommon among more primitive agriculturalists. The quasi-scientific aspect of Nupe agriculture is made most evident in the 'theoretical' rulings which the people themselves are always ready to lay down. Thus informants formulated the following rule: there exist two kinds of rice, one taking 90 days, the other 180 days to mature; or this: the latest date for the planting of ground-nuts is the beginning of the third month (counted from the beginning of the planting season). Not all such rules are fully convincing to the European agriculturist—we remember the rule about planting yams before the dry season in order to make them grow bigger. But, on the other hand, there is plenty of evidence to show that the existing body of native farm-knowledge admits of experiment, and is constantly assimilating newly gained experiences. There is, for example, the new 'rule' about cotton and red pepper being excellent first crops before millet and sorghum. Experiment has besides been forced upon the native cultivator by the introduction of modern crops or varieties. Thus the people have tried with varying success to grow cotton on different kinds of soil; cotton-growing has also caused new difficulties with regard to the distribution of agricultural work, which can be solved ultimately only by experiment.²

Long experimenting, however, which does not lead to the incorporation of the new experiences into that solid body of farming-knowledge

¹ The one exception is the magic linked with the cultivation of kola-nut trees, which itself represents an exceptional form of cultivation. Apart from this magic there exist only the annual fertility cults which set the spiritual framework for farming activities in general, and certain varying, unsystematic forms of magic—charms applied to hoes, or a specific magic performed over a field—which are to ensure success in individual cases.

² In 1936 the Agricultural Officer of Bida Division travelled round the district to instruct personally the cotton-growers in the more important centres about the proper date for planting cotton—information which, coming many years after cotton-growing had been introduced in this area, only confirmed a point of technique which the people had already discovered for themselves.

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easily turns into discouragement. In Kutigi and Sakpe I have spoken to many farmers who, discouraged by the increasing difficulties that appear to accompany cotton-growing, seemed determined to give it up altogether. We may, I think, draw a valuable lesson from this. If new agricultural schemes are to be introduced they must be brought in already well tried-out and fully adapted to the existing conditions. The adoption of a new crop or technique is to the native in itself a large-scale experiment; to make the people adopt a technique which has not been fully tried-out means to double this element of experimenting. It will prevent the new knowledge from being absorbed quickly in the 'body of Nupe farming-knowledge' on which the people feel they must be able to rely, and may eventually give them over to disappointment and discouragement.

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BY-PRODUCTS OF AGRICULTURE

Agriculture and forest-cultivation produce as by-products certain raw materials which are used in Nupe home industries and handicrafts. Thus the grain-stalks which are left on the fields after the harvest are used for the making of fences, doors, and bedsteads: cut in fine strips, grain and maize stalks are used for mat-making; a vegetable dye, black and red, is gained from the stalk of a certain species of sorghum (*dindó-rogi*). Small trees which do not bear fruit are occasionally cut down by the owner of the field on which they stand and used as timber for house-repairs and suchlike. In all these cases it is the cultivator and his family themselves who use the plant or tree; the by-products of agriculture have no marketing value. This is different in the case of firewood and grass for thatching which, as I have mentioned already, is collected or cut by the Nupe women and marketed by the men (see p. 200).

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It is frequently quoted as a characteristic feature of African agriculture that every part of a plant or tree that can be used in any way is actually utilized by the people. This is only partly true in Nupe. Only a small proportion, for example, of the grain-stalks is used in the various ways just described. A great many farmers are either unskilled in the craft which makes use of these by-products, or devote their spare time to other, to them more attractive or profitable, occupations. This comparative failure on the part of the Nupe farmer to utilize to the fullest possible extent the products of his land appears to be connected with the complexity and specialization of the productive system of the country. As we shall see later, only certain groups or individuals have specialized in mat-making, the making of bedsteads, or dyeing. The influence of specialization involving a clear-cut division between the agriculturist and the craftsman who utilizes the by-products of agriculture is most conspicuous in this case; big trees, when not fruit-bearing, may also be cut down and used as timber. But no farmer would ever attempt to cut a big tree himself for fear of bungling the job and being injured or even killed by the falling tree. He calls in the professional wood-cutter, who possesses both the necessary skill and experience and the special magic which alone can prevent the spirit of the tree from revenging himself on

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184 yams, where beans and other crops may also be sown. In Lanwa³ yams and guinea-corn are planted on the same plot in alternate years, but where the land is less exhausted yams and cotton may be planted together on the same plot. In Kakanda yams were hardly grown at all when Meek was writing (1917),⁶ and guinea-corn was the staple.

241 Two types of millet—bulrush millet and "late" millet—are widely grown. Besides being staple crops, these are the only grains which may be used for ritual offerings. Cassava, introduced by the Hausa since 1910, is of minor importance and is grown during the dry season following the rice crop on irrigated land. Two varieties of rice are grown and practically all of it goes to the south as a cash crop. Onions are grown after rice in the river marshes.⁷

Within the settlements, house plots, often tended by old men, are cultivated, the main crops being green vegetables, beans, sorrel, red peppers, sweet potatoes, cassava, maize, and hemp. Sugar-cane, rice, and bananas are grown on the strips of marsh running through Bida town.⁸

The Bataci and Kyedye sub-tribes, who are mainly canoe-men and fishermen, have more recently been paying greater attention to agriculture. They grow catch crops of maize, sweet potatoes, cassava, and rice on their small marshland farms. There are generally two harvests each year, crops being planted as the Niger floods recede. Deep-water rice seed was asked for by a large number of Kede District inhabitants for cultivation when fishing was slack. Round Muregi rice has recently been introduced.⁹

251 Some crops (yams, sweet potatoes, etc.) are stored on the farm; others in home-
stead granaries (*edo*). Millet and sorghum are stored unthreshed; bulrush millet may have to be dried in an oven before storing. Crops for export are not stored.

● 242 The Government established 17 mixed farms around Bida Emirate during 1937-40. Each was about 12 acres and was equipped initially with a plough and two bulls, and employed two labourers.¹⁰

245 The soil and climate are not, on the whole, conducive to successful tree cultivation, except in the forest area west of the Kaduna River, where considerable initiative has been shown in tree-planting. The only trees to be cultivated are the citrus and mango (recent introductions) and the banana. With the exception of the oil-palm and kola, the produce of all trees is collected by women. Kola-nuts are collected by men; the produce of the oil-palm is divided between the occupier of the land and the chief of the town. Trees growing on farms are left standing and not cut down.

The banana is cultivated only round Bida, Pategi, and Labozhi. Kola (*ebi*) is grown mainly by the Kusopa of Labozhi and its cultivation is a long and difficult process. The locust-bean grows well in the town and open bush and is one of the most important trees in Nupe. The skins of the bean are used for dye and for ink, the powder in the pods for sweetening, while the seeds are an indispensable ingredient of Nupe cooking. The shea-nut grows wild in thin bush country; it is picked by the women, who also extract the fat (shea-butter). Even remote hamlets have their shea-kilns and the shea-nut is the main cash crop, 75% being sold as dried nuts for export. It is little used locally, except for lamp-oil. The oil-palm grows near watercourses and in the dense forest near Yeti. The extraction of the oil is women's work as is the manufacture of soap from the oil. The oil is most important in Nupe cooking but not in external exchange. Indigo grows wild but is occasionally cultivated in two forms, grass and tree. Men make and use dye from the grass and women that procured from the trees. It is traded to Yoruba.

[139] ³ Davies, 1920.

⁴ 1917.

⁵ Nadel, 1942, pp. 205-7.

⁶ Ibid.

⁷ Notes on Kede District, 1950.

⁸ Notes on Bida Emirate, 1936.

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likely to require a concomitant programme of technical training and capital provision for the development of secondary industries. At the same time there is no lack of other needs which can be met by the diversion of labour freed from farming into other activities. The staffing of schools, medical services, co-operative organisations, transport services and more specialised marketing systems will all make considerable demands. If the promise of the initial phase is fulfilled and a fifty per cent increase in agricultural output above existing levels were achieved, the full development of mixed farming at present standards would permit the release of about a quarter of the existing farming population for other forms of economic activity.

The point referred to above is particularly important in connection with fears that have been expressed lest mixed farming may lead to a system of *latifundia* and the growth of a class of depressed landless farm labourers. There is indeed the likelihood in certain areas, especially near big markets and where considerable landed estates are retained by the nobility of the emirates, that the opportunities offered by mixed farming techniques for commercial agriculture and capital investment in land and farm equipment will be taken. The Emir of Bida^{is}, for example, one of the leading mixed farmers. Moreover, the tendency to *de facto* sale and purchase of personal rights to land is likely to grow in closely settled and productive areas and a new class of landlords will emerge.

Steps to limit the acquisition of land beyond the limits needed by the farmer to run his mixed farm with household labour and local co-operation are already being taken in some areas. On the other hand, mixed farming is a more exacting technique and one that involves the maintenance of more capital equipment than the traditional hand farming. The optimum size of the mixed farming unit can hardly be said to have been settled yet, but the isolated one- or two-man farm unit with a pair of bullocks is very vulnerable to mischance. The relative merits of multiple households, co-operative household groups and farms run with the aid of paid labour cannot be decided *a priori* and they will not be the same in all areas. The really important point in this connection is not so much whether an attempt should be made to prevent the growth of a farm labouring class in connection with mixed farming in large units, but what rewards such workers are to receive. This will depend ultimately on the alternative demands for labour. With flourishing secondary industries and services, the large farmer who needs hired labour will have to provide conditions not merely as good but better than those at present enjoyed by the independent hand farmer. Without such alternative forms of employment, however, the risk of the growth of a depressed farm labouring class will be great.

The development of stock rearing for the fattening of cattle for the meat market and the increase of goat breeding for the sake of greater skin

* [The Emir of Bida is the Etse Nupe, -Analyst]